

CLAIMS:

1 1. A method of processing digital signals to be transmitted in analog
2 form, said method comprising:

3 converting a digital signal to produce an analog signal image at a radio
4 frequency; and

5 using said analog signal image at said radio frequency for transmission.

1 2. The method of claim 1 comprising:

2 positioning said digital signal within a conversion bandwidth defined as one-
3 half the rate of said converting.

1 3. The method of claim 1 comprising:

2 receiving a plurality of digital signals;

3 positioning said digital signals in non-overlapping portions of a conversion
4 bandwidth defined as one-half the rate of said converting;

5 converting said digital signals to produce analog signal images at different
6 transmission frequencies; and

7 using said analog signal images for transmission.

1 4. The method of claim 3 wherein said step of using includes:

2 providing an analog signal image onto a path;

3 amplifying said analog signal image on said path; and

4 transmitting said amplified analog signal image using at least one antenna.

1 5. The method of claim 4 wherein said steps of providing, amplifying and
2 transmitting include:

3 providing a first analog signal image of a first frequency band on a first path
4 and a second analog signal image of a second frequency band on a second path;

5 amplifying said first analog signal image on said first path and said second
6 analog signal image on said second path; and

7 transmitting said first amplified analog signal image on a first antenna and
8 said second amplified analog signal image on a second antenna.

1 6. The method of claim 4 further comprising:

2 filtering a plurality of analog signal images at different frequency bands to
3 provide at least one analog signal image of a frequency band corresponding to each of
4 a plurality of paths.

1 7. The method of claim 4 further comprising:

2 selectively producing on each of a plurality of paths at least one analog signal
3 image of a frequency band corresponding to each of said plurality of paths.

1 8. The method of claim 1 further comprising:

2 adjusting a conversion rate for converting said digital signal to produce said
3 analog signal image at said RF frequency.

1 9. The method of claim 1 further comprising:

2 adjusting a frequency for said digital signal to be converted into analog form
3 to produce said analog signal image at said RF frequency.

1 10. A method of processing digital signals to be transmitted in analog
2 form, said method comprising the steps of:

3 converting a digital signal to produce a projected analog signal image; and
4 using said projected analog signal image at said frequency to produce analog
5 signals for transmission.

1 11. The method of claim 10 comprising:

2 positioning said digital signal within a conversion bandwidth defined as one-
3 half the rate of said conversion frequency.

- 1 12. The method of claim 10 comprising:
 - 2 receiving a plurality of digital signals;
 - 3 positioning said digital signals in non-overlapping portions of a conversion
 - 4 bandwidth defined as one-half the rate of said conversion frequency;
 - 5 converting said digital signals to produce said projected analog signal images
 - 6 at frequencies greater than said conversion bandwidth; and
 - 7 using said projected analog signal images for transmission.

1 13. The method of claim 12 wherein said step of using includes:
2 providing a projected analog signal image onto a path;
3 amplifying said projected analog signal image on said path; and
4 transmitting said amplified analog signal image using at least one antenna.

- 1 14. The method of claim 13 wherein said steps of providing, amplifying
2 and transmitting further include:
 - 3 providing a first projected analog signal image of a first frequency band on a
4 first path and a second projected analog signal image of a second frequency band on a
5 second path;
 - 6 amplifying said first projected analog signal image on said first path and said
7 second projected analog signal image on said second path; and
 - 8 transmitting said first amplified analog signal image on a first antenna and
9 said second amplified analog signal image on a second antenna.

1 15. The method of claim 13 wherein said step of providing further
2 includes:

3 filtering a plurality of said projected analog signal images at different
4 frequency bands to provide at least one projected analog signal image of a frequency
5 band corresponding to each of a plurality of paths.

1 16. The method of claim 13 wherein said steps of providing further
2 includes:

3 selectively producing on each of a plurality of paths at least one projected
4 analog signal image of a frequency band corresponding to each of said plurality of
5 paths.

1 17. The method of claim 10 further comprising:
2 adjusting a conversion rate for converting said digital signal to produce said
3 projected analog signal image at said frequency.

1 18. The method of claim 10 further comprising:
2 adjusting a digital frequency for said digital signal to be converted into analog
3 form to produce said projected analog signal image at said frequency.

1 19 A transmitter comprising:
2 a digital to analog converter configured to receive a digital signal and convert
3 said digital signal into analog form, thereby producing an analog signal image at a
4 radio frequency; and
5 transmitter circuitry configured to use said analog signal image at said radio
6 frequency for transmission.

1 20. The transmitter of claim 19 comprising:
2 signal processing circuitry configured to position said digital signal within a
3 conversion bandwidth defined as one-half the rate of converting said digital signal
4 into analog form.

1 21. The transmitter of claim 19 comprising:
2 signal processing circuitry configured to receive a plurality of digital signals
3 and to position said digital signals in non-overlapping portions of a conversion
4 bandwidth defined as one-half the rate of said converting;
5 said digital to analog converter configured to convert said digital signals to
6 produce analog signal images at different transmission frequencies; and
7 said transmitter circuitry configured to use said analog signal images for
8 transmission.

1 22. The transmitter of claim 19 wherein said transmitter circuitry
2 comprising:
3 a path for carrying said analog signal image;
4 an amplifier on said path for amplifying said analog signal image on said path;
5 and
6 at least one antenna for transmitting said amplified analog signal image.

1 23. The method of claim 21 wherein said transmitter circuitry comprises:
2 signal distribution circuitry configured to receive said analog signal images
3 from said digital to analog converter and to provide a first analog signal image of a
4 first frequency band on a first path and a second analog signal image of a second
5 frequency band on a second path;
6 a first amplifier on said first path for amplifying said first analog signal image
7 on said first path;
8 a second amplifier on said second path for amplifying said second analog
9 signal image on said second path;
10 a first antenna connected to said first path for transmitting said first amplified
11 analog signal image; and
12 a second antenna connected to said second path for transmitting said second
13 amplified analog signal image.

1 24. The transmitter of claim 19, said transmitter configured to adjust a
2 conversion rate for said digital to analog converter to produce said analog signal
3 image at said radio frequency.

1 25. The transmitter of claim 19, said transmitter configured to adjust a
2 digital frequency for said digital signal to be converted into analog form to produce
3 said analog signal image at said radio frequency.

1 26. A transmitter comprising:
2 a digital to analog converter configured to receive a digital signal and convert
3 said digital signal into analog form, thereby producing a projected analog signal
4 image; and
5 transmitter circuitry configured to use said projected analog signal image to
6 produce analog signals for transmission.

1 27. The transmitter of claim 26 comprising:
2 signal processing circuitry configured to position said digital signal within a
3 conversion bandwidth defined as one-half the rate of said conversion frequency.

1 28. The transmitter of claim 26 comprising:
2 signal processing circuitry configured to receive a plurality of digital signals
3 and to position said digital signals in non-overlapping portions of said conversion
4 bandwidth;
5 said digital to analog converter configured to convert said digital signals to
6 produce projected analog signal images at frequencies greater than said conversion
7 bandwidth; and
8 said transmitter circuitry configured to use said projected analog signal images
9 for transmission.

1 29. The transmitter of claim 26 wherein said transmitter circuitry includes:
2 a path for carrying said projected analog signal image;
3 an amplifier on said path for amplifying said projected analog signal image on
4 said path; and
5 at least one antenna for transmitting said amplified analog signal image.

1 30. The transmitter of claim 27 wherein said transmitter circuitry
2 comprises:
3 signal distribution circuitry configured to receive said projected analog signal
4 images from said digital to analog converter and to provide a first projected analog
5 signal image of a first frequency band on a first path and a second projected analog
6 signal image of a second frequency band on a second path;
7 a first amplifier on said first path for amplifying said first projected analog
8 signal image on said first path;
9 a second amplifier on said second path for amplifying said second projected
10 analog signal image on said second path;
11 a first antenna connected to said first path for transmitting said first amplified
12 analog signal image; and
13 a second antenna connected to said second path for transmitting said second
14 amplified analog signal image.

1 31. The transmitter of claim 26, said transmitter configured to adjust a
2 conversion rate for said digital to analog converter to produce said projected analog
3 signal image at said frequency.

1 32. The transmitter of claim 26, said transmitter configured to adjust a
2 digital frequency for said digital signal to be converted into analog form to produce
3 said projected analog signal image at said frequency.